

REMARKS

Claims 1, 3-12 and 14-23 are pending in this application. By this Amendment, claims 1, 8-12, 15, 19, 20, 22 and 23 are amended, and claims 2, 13 and 24 are canceled without prejudice or disclaimer. Reconsideration based on the above amendments and following remarks is respectfully requested.

I. The Claims Satisfy 35 U.S.C. §112

The Office Action rejects claims 11 and 13 under 35 U.S.C. §112, first paragraph, as failing to comply with the enabling requirement. Claims 11 and 13 are amended to obviate the rejection. Withdrawal of the rejection under 35 U.S.C. §112, first paragraph, is respectfully requested.

II. The Claims Define Allowable Subject matter

The Office Action rejects claims 1-10, 12, and 14-24 under 35 U.S.C. §103 as unpatentable over U.S. Patent No. 5,907,314 to Negishi et al. (hereinafter "Negishi") in view of U.S. Patent No. 6,819,311 to Nose et al. (hereinafter "Nose"). The rejection is respectfully traversed.

A. Summary

Nose discloses selecting scanning lines by skipping. However, Nose employs a 1H inversion drive scheme in which polarities are inverted for each scanning line, which is different from the technique adopted by the claimed invention.

In Negishi, a segment of the screen is provided with positive polarity, and the area having the positive polarity is gradually shifted. However, in Negishi, the screen is divided into an upper half and a lower half, and the halves are driven as independent panels. That is, a respective driver and data lines are provided for each of the upper and lower halves. Each of the upper and lower halves is driven by the surface inversion drive.

This surface inversion drive scheme may experience disadvantages, as disclosed in the specification of the present application, since only one of the polarities (i.e., the positive or negative polarity) is applied to data lines. The claimed invention solves such disadvantages when the surface inversion drive is performed.

B. Claim 1

The liquid crystal device of claim 1 selects scanning lines by skipping a predetermined number of scanning lines. In addition, signals having the same polarity are supplied to pixels corresponding to: (a) the first scanning line, and (b) the second scanning line which is selected prior to the first scanning line and which is adjacent to the first scanning line.

Furthermore, during each one vertical period, the time in which a voltage with positive polarity is applied to data lines and the time in which a voltage with negative polarity is applied to the data lines are made equal.

Contrarily, Nose adopts a 1H inversion drive scheme technique in which signals having different polarities are applied to adjacent scanning lines. Accordingly, the technique of the claimed invention is patentably distinct from that of Nose.

In Negishi, since the upper and lower halves are driven separately, during each one vertical period, the time in which a voltage with positive polarity is applied to data lines, and the time in which a voltage with negative polarity is applied to the data lines, are different. Accordingly, the claimed invention is patentably different from the teachings of Negishi.

Furthermore, the teachings of Negishi cannot solve the above-identified disadvantages. More specifically, in accordance with the claimed invention, video signals having the same polarity are applied to adjacent scanning lines, and during each one vertical period, the time in which a voltage with positive polarity is applied to data lines

and the time in which a voltage with negative polarity is applied to the data lines are made equal. As a result, the disadvantages of the 1H inversion drive scheme according to the teachings of Nose can be solved, and at the same time, it is possible to solve disadvantages of the surface inversion drive, as experienced by the teachings of Negishi.

As described above, the claimed invention is patentably distinct from the teachings of Nose and Negishi, and can solve the disadvantages of Nose and Negishi. Furthermore, it would not have been obvious to one of ordinary skill in the art at the time of the invention to modify Negishi to supply data signals to each of the plural data lines with a signal electrode drive circuit instead of two signal electrode drive circuits; by supplying data signals sequentially to each of the plural data lines rather than supplying data signals to two data lines simultaneously and to drive the scanning lines sequentially, as taught by Nose, to reduce the number of driving circuits required to drive a display, and thus to provide more space for display area, since Nose teaches a 1H inversion drive scheme, and Negishi employs the surface inversion drive technique.

C. Claim 8

In claim 8, video signals are delayed and the original the delayed signals are supplied alternately. Neither Nose nor Negishi teaches or suggests this feature.

D. Claim 10

In claim 10, a plurality of gate-output pulses (n gate-output pulses) are input to the driver during each one vertical period, which enables skipping scanning with a single driver. Contrarily, both Nose and Negishi teach supplying a single pulse (start pulse) to the driver during each one vertical period. Therefore, the techniques disclosed in Nose and Negishi require a plurality of drivers to achieve skipping scanning. In addition, the teachings of Nose and Negishi need to control the circuit such that the a plurality of drivers function simultaneously, which makes the control complex.

Although Nose teaches that two scanning start pulse are supplied in a single field, one field is made up of two vertical periods. One field is made up of one vertical period for supplying a video signal, plus one vertical period for supplying a black signal. For the above reason, in Nose, only a scanning start pulse is supplied during one vertical period.

For at least these reasons, it is respectfully submitted that the claims discussed above are distinguishable over the applied art. The claims depending from the claims discussed above are likewise distinguishable over the applied art for at least the reasons discussed as well as for the additional features they recite. Withdrawal of the rejection under 35 U.S.C. §103 is respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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Date: May 22, 2006

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